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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 55

Application Number: 08/120,105
Filing Date: September 10, 1993
Appellant(s): WINTER ET AL.

Ashley I. Pezzner
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/6/03.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows:

The issues are as follows:

I. Whether Claims 15, 17-19, 21-25 and 27-32 meet the requirements of 35 U.S.C. § 112, first paragraph.

II. Whether Claims 15, 17-19, 21-25 and 27-32 meet the requirements of 35 U.S.C. § 112, first paragraph.

Upon reconsideration the Examiner withdraws the rejection of Claim 32 under 35 U.S.C. *§ 112,* fourth paragraph, and the rejection is withdrawn.

With the filing and acceptance of the terminal disclaimer (see Paper No. 48), the obviousness double patenting rejection over U.S. Patent 5,700,886 is withdrawn, as is noted by applicant.

(7) Grouping of Claims

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with because the only separate group of claims is for Claim 32 and there is no reason presented, as set forth in 37 CFR 1.192(c)(7) and (c)(8), as to why Claim 32 is patentable over the other claims for the outstanding rejections.

(8) Claims Appealed

A substantially correct copy of appealed Claims 15, 17-19, 21-25 and 27-32 appears on pages (i) to (vii) of the Appendix to the appellant's brief.

Claim 15 in the third line includes a misspelling of "indenyl" as noted by applicant. Applicant's footnote in this regard is interesting as the claim of record does not include this misspelling.

Claims 20 and 23 depend from a cancelled claim. However, as the claims stand or fall together the rejection and decision on appeal can be based upon Claim 17. In the event the Examiner is reversed, applicant will need to correct the dependency or cancel the claims. It is also noted that Claim 23 cannot be amended to depend from Claim 17 as it would then be a duplicate of Claim 22.

(9) Prior Art of Record

EP-351,189 SUMITOMO CHEMICAL CO., LTD. 1-1990

"Plastics - Determination of melting behavior (melting temperature or melting range) of semi-crystalline polymers", International Standard ISO 3146, International Organization for Standardization (1985).

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112, First Paragraph

Claims 15, 17-19, 21-25 and 27-32 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

First, the specification as filed stated that "[m]elting points, peak widths, melting ranges and crystallization temperatures were determined by DSC spectrometry (heating/cooling rates of 20°C /min)" (underlining added) (page 14, lines 16-18). As determining melting phenomena requires heating a material, and crystallization temperatures require cooling a material, one of ordinary skill in the art would only understand that the melting phenomena were determined by heating at 20°C /min, and the crystallization temperatures were determined by cooling at 20°C /min. Applicant's Claim 17 (not originally filed) states that "--- melting ranges are determined at heating/cooling rates of 20°C /min" in response to a rejection based upon indefiniteness under 35 U.S.C. § 112, second paragraph. This was the result of the Examiner earlier pointing out that melting points and ranges were indefinite unless the thermal history of the sample was known. Applicant urges that one of ordinary skill in the art would have known that the samples were first melted, then cooled, and then remelted, all at 20°C /min. However, at no place does

the specification as filed teach determination of melting ranges at heating/cooling rates of 20°C /min, or by first melting, then cooling and then remelting.

Secondly, applicant depends on DSC characterization of the melting behavior of components of the blend, as well as that of the blend itself in regards to both what is called "the peak in the melting range", "the half-intensity width of the melting peak" and "the width determined at quarter peak height" in the melting point range. The specification never teaches what "the peak" references in the melting ranges which are bimodal or polymodal, which by definition have more than one peak. Further, the crystallinity of both the components and the blend would be expected to be a function of the thermal history of the materials, yet the specification provides no data on thermal conditioning of the samples prior to measurement. (See for example the discussion in EP'189, especially page 5, line 29 to page 6, line 40, and page 9, lines 20-31, regarding thermal fusion data as a function of thermal history). Peak widths would also be expected to be a function of sample size and machine response. Thus, it is unclear what the precise melting ranges and peak widths of the instant claims represent. Additionally, there is no teaching as to how half widths and quarter widths are determined for melting peaks which are not completely resolved. It appears that the examples are typically unresolved, e.g., Examples 1-3 discuss shoulders, Example 4 has a double peak and Example 5 only reports a maximum.

35 USC § 112, Second Paragraph, Rejection

Claims 15, 17-19, 21-25 and 27-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The language of Claim 17 is indefinite because:

a. A bimodal or multimodal melting range would have more than one melting peak and it is indefinite as to which peak either "the peak" or "the melting peak" refers.

b. The language is further indefinite because as noted in the rejection under 35 U.S.C. § 112, first paragraph, the crystallinity of both the components and the blend would be expected to be a function of the thermal history of the materials. Yet the specification provides no data on

thermal conditioning of the samples prior to measurement, thus making peak intensities and widths indefinite.

c. The "half-intensity width of the melting peak" and "the width at quarter peak height" are indefinite because it is unclear which peak is being referenced, or for multi-modal melting ranges how the peaks are resolved.

d. The language is further indefinite because of the language "can be bimodal or multimodal", as it is unclear as to whether or not the melting range is bimodal or multimodal.

e. The definition of R^3 and R^4 "--- where the substituents ---- form together with the atoms connecting them a ring" is indefinite, because it can't be told which atoms are connected together.

(11) Response to Argument

35 USC § 112, First Paragraph

Applicants "Issue 1" merely states that they believe that page 14, lines 16-18 of the specification does teach that melting ranges are determined at heating/cooling rates of 20°C /min. The only basis to support this belief is a statement that *"--- this information [*presumably referring to page 14, lines 16-18*], together with the knowledge that normally the thermal history is erased to obtain unambiguous material properties, is sufficient for a person of ordinary skill in the art to repeat the measurement*" (underlining added). As stated in the rejection,

> "--- as filed the specification stated that "[m]elting points, peak widths, melting ranges and crystallization temperatures were determined by DSC spectrometry (heating/cooling rates of 20°C /min)" (underlining added) (page 14, lines 16-18). As determining melting phenomena requires heating a material, and crystallization temperatures require cooling a material, one of ordinary skill in the art would only understand that the melting phenomena were determined by heating at 20°C /min, and the crystallization temperatures were determined by cooling at 20°C /min."

At no place does the specification as filed teach determination of melting ranges at heating/cooling rates of 20°C /min. The argument that one of ordinary skill in the art would have the knowledge that normally thermal history is erased to obtain unambiguous material properties is not convincing because it does not follow that such a procedure is always or necessarily used, the specification is silent on this matter, and appicant has provided no evidence to support the argument.

2. Applicant does not specifically rebut the second aspect of the rejection under 35 U.S.C. § 112, first paragraph, i.e., concerning the deficiencies in the specification concerning the deficiencies in the DSC characterization of the melting behavior, in regards to melting peaks, and peak widths. Applicant apparently relies on the substance of "Issues 2 through 4" regarding the rejection under 35 U.S.C. § 112, second paragraph. To the degree that this is true, the arguments rebutted below are also not found to be persuasive in overcoming the rejection under 35 U.S.C. § 112, first paragraph.

35 USC § 112, Second Paragraph

Applicant's "Issue 2" argues that "the peak" is not indefinite because the peak in a bimodal or multimodal curve refers to the entire curve starting from when it leaves the baseline to the point where it returns. Applicant relies on the definition at 13.4 in ISO 3146 (an international standard test method for determining melting behavior) to support this argument. This is not deemed to be persuasive because it seems clear that what is being discussed at 13.4 is not a bimodal or polymodal curve. The figure referenced at 13.4 is not a bimodal or polymodal curve, and 13.4 also has the following note:

> "A peak is attributable to the occurence of some single process, It is normally characterized by a deviation from the established baseline, a maximum deflection, and a reestblishment of a baseline, not necessarily identical to that before the peak." (underlining added).

A bimodal or multimodal curve would clearly be representative of more than a single process, and thus would clearly be considered to contain more than one peak. Applicant's take issue with this latter statement referring to other heat generation or consuming processes which is a red herring. Clearly the compositions being claimed are composed of at least two polyolefins having melting point differences of at least 5°C (see Claim 17). Melting of such a composition which shows bimodal or polymodal peaks is indicative of separate melting points of the components, i.e., more than a single process. (Also see applicant's last sentence at the end of Issue 3.) Applicant's statement at the end of Issue 2, is perhaps the best rebuttal of the argument presented, i.e., "*Since in the present case only one process, i.e., melting occurs, only one "peak" results, which however, can be bimodal (having two peaks) or multimodal (having several peaks or shoulder"* (underlining added). Thus, applicant's themselves acknowledge the presence of more than one peak.

Applicant's "Issue 3" argues that, the specification at page 14, lines 16-18, teaches that the DSC spectrum is determined with a heating/cooling rate of 20°C , and that *"---[t]his means run first a heating cooling cycle and then start recording the DCS curve".* Applicant attempts to read this interpretation into the specification relying on Section 17.2.2 of the test method ISO 3146. This is not deemed to be persuasive because the cited section of the specification only teaches that "[m]elting points, peak widths, melting ranges and crystallization temperatures were determined by DSC spectrometry (heating/cooling rates of 20°C /min)". As noted in the stated rejection,

> "As determining melting phenomena requires heating a material, and crystallization temperatures require cooling a material, one of ordinary skill in the art would only understand that the melting phenomena were determined by heating at 20°C /min, and the crystallization temperatures were determined by cooling at 20°C /min."

As to ISO 3146, this is not referenced in the specification as filed, and further the cited section only teaches a method of erasing the effects of the previous thermal history if it is desired to do so. Applicant has provided no teaching that this was done. Note also that the method of erasing thermal history involves more than just specifying a heating and cooling rate. Applicant also references Ser van der Ven (pp 589-590) for a teaching that the procedure most frequently followed in determining DSC melting points of polymers involves first heating well above the melting point, cooling to below the crystallization temperature at a constant rate and then remelting. This is not deemed to be persuasive, because even if it is a method most frequently used, it doesn't follow that one of ordinary skill in the art would have known that this is the method which was used by applicant.

Applicant's "Issue 4" attempts to rebut the issue that the "half-intensity width of the melting peak" and "the width at quarter peak height" are indefinite because it is unclear which peak is being referenced, or for multi-modal melting ranges how the peaks are resolved. Applicant argues that following logic and "pure" definition of terms makes the determinations possible and unambiguous. This is not deemed to be persuasive because applicant tries to differentiate between peaks and tips, presumably what they call "pure" definitions, and as discussed above, a fair reading of a bimodal or polymodal curve is one with more than one peak. The reliance on ISO 3146 to support their argument is misplaced because the curves referred to are for a single process as has been discussed above. Even applicants in the last

sentence of "Issue 3" note that "[t]he different melting points of the at least two polyolefins are clearly related to the melting points of the components". It is interesting that applicant acknowledges that the DSC curve could contain two clearly resolved peaks or nearly resolved peaks and concludes that "logic" then teaches that the width determined at half peak height, or quarter peak height is the sum of the peak widths at half or quarter peak heights. Why this would be more logical then including the distance between the peaks is not clear, nor is it supported by any evidence.

Applicant's "Issue 5" argues that the term "can be bimodal or multimodal" is definite because the claim also states that the "melting range" is broad, bimodal or multimodal. This is interesting because then the terminology "can be bimodal or multimodal" could be eliminated, particulrly if "the peak" has the meaning applicant has been arguing, i.e., the maximum in the DSC curve which deviates from the base line. However, to first state that the melting range is broad, bimodal or multimodal and then only that the peak can be bimodal or multimodal is confusing and indefinite.

Applicant's "Issue 6" argues that R^3 and R^4 "--- where the substituents ---- form together with the atoms connecting them a ring" is definite, because one of ordinary skill in the art would know what is meant from the specification and that a 4,5-benzoindenyl ligand exemplifies what is meant. This is not deemed to be persuasive because it isn't clear what the two substituents are that could be placed at the 4 and 5 positions of an indenyl ring which would form together with the atoms connecting them a 4,5-benzo ring. Further, there are two separate requirements set forth in the § 112, second paragraph:

> (A) the claims must set forth the subject matter that applicants regard as their invention; and
> (B) the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant.
> See M.P.E.P. § 2171.

It is not seen that the metes and bounds of what is being claimed can be determined.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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